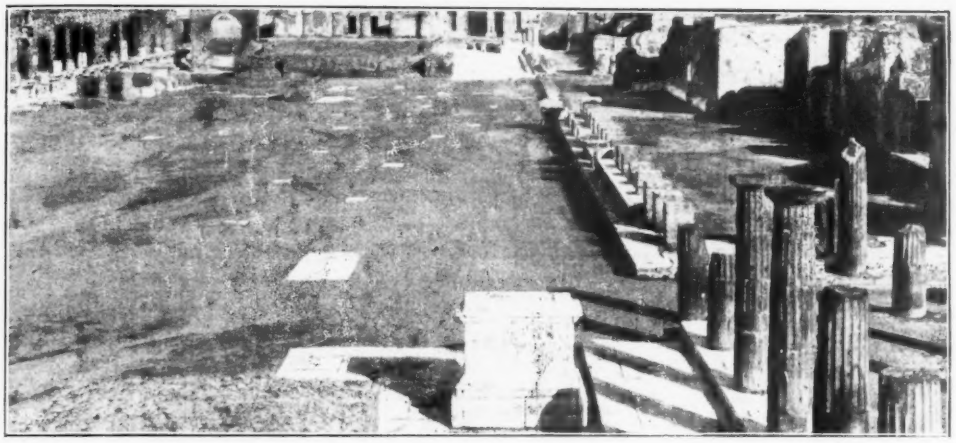

PAST TRADITION AND MODERN DESIGN.

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WHEN your Honorary Secretary, Mr. Oglesby, conveyed the honour of an invitation to read a Paper before you it occurred to me that, as you already had a number of historical Papers on your list, and as I had myself—though many years ago—inflicted an archæological lecture upon you, you might care to discuss some phase of the educational problem, and that the relationship of theoretical study to actual practice in design might be interesting.

I sent him a title from Norway—far enough away, you would think, from architectural microbes—and set about the writing in order to get it off my mind as soon as possible. Since then I have spent the time in periodical fits of desperation, as Paper after Paper and article after article has appeared in the Institute Journal, the *Architectural Review*, and the professional papers, all dealing with the subject that I had, in my innocence, chosen; and I have written and rewritten and cut out all my choice bits because they have been better said than I can possibly say them. *Di meliora piis.*

In taking stock of the architectural position of to-day the difference readily occurs to us between the conscious effort after design and arbitrary choice of styles which are the mark, to speak roughly, of the last hundred years, and the traditional work of preceding centuries; in other words, the difference between individualism and national co-operation in design; and, acknowledging our debt to tradition and to the past, we ask ourselves how we may make the best use of our inheritance.

I must take for granted, and put entirely on one side, the science of constructive methods, which we have known from our youth upwards to form the bottom of all true building, and confine myself to the æsthetic side of the subject; for, after all, the great buildings to which we have been accustomed to turn for our education as architects, and our pleasure as artists, do not, as a rule, appeal to us *primarily* as problems of successful construction, but as the fine artistic expression of those problems; and we cannot conceal from ourselves the fact that,

however skilful we may be in the science of construction, we can never hope for any sort of a niche in the Temple of Fame, or have any satisfaction from any but the lowest standpoint, unless we can produce buildings of sufficient beauty to obtain a verdict from the educated opinion of future generations. To secure this verdict a building, even if it is not a work of genius, must at any rate show the evidences of careful and competent thought. It must have essential beauty, and it must not bear the impress of whims or eccentricities which will appear incongruous to any man at any time. It must be based upon certain canons or laws that have hitherto seemed unalterable, and to which we still see no determination; and it must have an expressive character of its own which differentiates it from any other building.

We have heard a great deal lately of national degeneration, of decay—mental, moral, physical, and, I need hardly add, fiscal—and, while everyone has his panacea, one of the remedies most generally suggested is education. One is inclined to fear that, if we are dependent upon artificial stimulus, educational or other, and have lost the power of throwing up great men without it, we shall find it hard as a nation to stand against rougher and stronger material; for genius will make its way without such help, and no great development has been the result of organised and conscious education; while famous architects have become so, not through the schools, but by virtue of self-training. In fact, any educational system must be devised, not for genius, but for the assistance of average and low ability.

In this matter of professional education we are certainly behind some other countries. Theoretically English work should fall hopelessly in the rear, but practically one is inclined to think that this is not so, and that our methods are rather favourable than otherwise for men of enthusiasm and determination. At the same time it is too evident that some very great improvement can and ought to be effected. Germany, France, and America are usually cited as countries in which the science and art of education are most thoroughly understood. France has always been the home of the arts, and the quick apprehension and versatile genius of her people stand her in good stead now as always in the past: her training is vastly ambitious, and in this there is a lesson as well as a warning to ourselves. America shares with France a facility for brilliant draughtsmanship, but the training does not seem to produce great results in practice, while the products of Germany, with the most highly systematised training of all, are very largely appalling.

And the problem for us now is, it seems to me, how to produce a judicious system which will not concern itself so much with archæological lore, or brilliant draughtsmanship, or with fits of some new art, but one which will graft upon a thorough and comprehensive knowledge of past traditions canons of criticism, unerring taste, original thought, and a sense of rhythm and beauty which may lead to progress and individuality of building. Of course education and training cannot pretend to do this for all men, and we must have a gifted and highly trained staff of professors if they can do it for the majority of those who intend to be architects.

Before pursuing this theme one word as to the distinction to which I referred between individual and national or co-operative work. Without entering into a long historical survey, we may note three large divisions into which, from the point of view of this Paper, architectural history in this country may naturally fall. We need not concern ourselves with origins, but, from the first beginnings of our national architecture, you have a period of pure tradition when decade by decade a steady and almost imperceptible succession of changes went on with occasional periods of more marked movement like rapids dividing the quiet reaches of a great river, each reach different in character, but each traversed by the same strong stream with its outlying backwaters and stiller pools. Then there is a sudden break and change, just as (to continue the simile) we may see among the limestone hills a stream suddenly vanishing

and as suddenly reappearing with a different character among different surroundings. Now we have lost the nameless traditional building character. A new ideal exists; the work has a different dress; the inspiration is due to a great European modern intellectual movement, instead of to the conditions of mediæval life and thought. To every building of importance, and to many of no particular importance, is attached a name; and so, while a new tradition is established and follows on its course for three hundred as the old had done for five hundred years, the development is due, not to the nameless effort of a nation, but to that of individuals, restrained, however, by new but firmly established traditions which no one thought of discarding, whatever the type of building to be erected, though, with new methods and new ideals, the individual still worked, as it were, in a great national school. As the intellectual form of the movement waned, the style changed and gradually played itself out, and then development upon traditional lines stopped to give place to a period of purely individual and personal character when architects recognised no controlling influence from tradition, and returned again to a Greek or mediæval revival, without the Greek or mediæval spirit, but picked and chose at will a church in one style, a mansion in another, and a town hall in a third.

It seems that the conditions of life are such that there will be no return to the old order of things. To some extent we have to-day got back again to a happier ideal than has existed for some time past; but universal competition between man and man, the cosmopolitan state of society, and the accumulation of riches, all tend to accentuate individualism as opposed to co-operation; while the introduction of new materials and the development of commercial conditions and instincts still further open the door to constructive ability and business smartness as distinct from the study of architecture as an art.

The greatest periods of architecture have been those which are the expression of high standards of religious, intellectual, or social movement, just as are the greatest periods of painting or literature; and though it is often said of individuals that they were the originators of such and such movements, they are often, perhaps, only the quicker-minded men who anticipate the awakening consciousness of the masses of their time and give the necessary impulse. To-day our instincts, religious, intellectual, and social, are so heterogeneous that there is no controlling force to bind individual to individual, and there is therefore all the more reason why some sound common training should be found to inculcate at any rate first principles and form a nucleus for further progress. But, for all this, the age in which we live is, or ought to be, a great one for architects.

One seems to know very little of the education of most of our predecessors. Of our fathers we should probably say that they were educated in So-and-so's office, and that they travelled here and there. Of ourselves we may say much the same, but perhaps also add that more of us had the advantages of the Academy schools or the Architectural Association in its earlier stage; and those of generations younger will tell us of this or that school and this or that degree. Mediæval builders we connect with companies and guilds of working artificers from among the ranks of which few names have survived, and even of the early training of the Renaissance schools we have only here and there a glimpse. The student or apprentice of the fifteenth, sixteenth, and seventeenth centuries was trained in the three arts of sculpture, painting, and architecture. In after life, as we know, he often practised all three, and, assisted by early training in the goldsmith's workshop, he was able to produce, not only beautiful construction, but possessed, as part of his designing faculties, a working knowledge of the sister arts. Here, then, is a suggestion for us. I believe that we could all of us have sufficient practical knowledge, too, of these arts to design our buildings with a view to them, and to work with fellow-artists so that they shall have their proper chance. As a rule we

cannot or do not. Possibly the idea does not occur, but one of the functions of education is to open the eyes to all opportunities and to their full and proper utilisation. One does not come across books much with reference to Renaissance training. Here we have an immense advantage, and must guard against the attendant dangers of so easy an accessibility to books which I hope to have time to advert to later. Raphael complains in a letter to Castiglione that Vitruvius does not help him as much as he ought, and Inigo Jones took his Palladio to Italy and annotated it. Raphael revelled in the measurement of the antiquities of Rome, for which, from his official position, he had unrivalled opportunities; and San Michele wandered from Rome to Venice, and Venice to Padua, and from Padua on again. Buildings were books then as now, and their measurement formed the self-education of the architect, whether he worked, as Peruzzi did, with an eye to the composition of his architectural backgrounds, or, as Brunelleschi, with the definite idea of constructing his dome at Florence, as Raphael by command of the Pope, or as Scamozzi exercising his powers of design in restoring upon paper the buildings whose remains he had measured.

Few of the great men were exclusively architects, and our own greatest genius took up the work in middle life without special training for the practice of any art. We gather, therefore, of the Renaissance architect—

(1) That he was master of more than his own special branch of art.

(2) That his principal school was antiquity.

(3) That the product was something fresh, and constituted the greatest of modern revivals.

The mine in which he dug was that of classical antiquity prompted by the drift which all thought was taking at the time. Antiquity was his natural inheritance. With us in England to-day conditions are different and yet the same, and we can hardly afford to ignore his experience, and may take it as an axiom that, for the intelligent study and practice of design, a knowledge of the history and architecture of past times generally is essential; at any rate we have not yet found a substitute, and we have to determine how to attain two objects—(1) how to acquire knowledge of the right kind with a view to education in the broadest and best sense, and (2) how to help in the formation of style. And it has to be realised that it is not the mere measurement of an order or of anything else that is of educational value, but the logic and reason of parts and proportions; that it is not the acceptance of ready-made rules, but the search for principles upon which those rules are founded that matters; and that it is the absorption and application of the principles of beauty underlying all great work, of whatever age or country, that can alone create future progress. Individual thought, imagination, and skill will then decide what that progress is to be, and may lead to unexpected developments; but in any case the majority must rely upon their training in the schools for an educative influence which they will not acquire later.

Granted fundamental constructive knowledge, the whole question of progress resolves itself, to my mind, into a search after that elusive and indefinable quality, *style*—not *a* style, nor a suitable selection of styles from the past, but something that is acquired by the study of the best in all of them, the result of conscious and unconscious absorption, of thought and enthusiasm, of the cultivation of mind, and hand, and eye. "All is food for you. It is only in that way, by harvesting every grain of corn, that you can be great; a lot of harvesting is done unconsciously: supplement that by conscious harvesting." This was said of music, but it is equally true of our own study of the past as well as of other and more modern usage, and the success of the harvesting depends largely upon the preparation of the soil into which the grain is cast. You may say that everyone has not the will or the power to be great. But the schools should foster ambition to aim at the best and weed out those that show no aptitude.

There must always be leaders; a dead monotony is the last thing to strive for; but leaders can do more for others, and the majority learn more from their leaders when all have been to the best of their ability fellow-seekers after knowledge and style.

Greatness in building—I do not mean only large or important building—is difficult to define. One quality may be present in so supreme a degree that the absence of others may be almost overlooked. Ruskin's ethical classification of the lamps of sacrifice, truth, power, beauty, memory, and obedience gives us the abstract principles in their highest form; but such terms as stability, grandeur, mass, repose, proportion, harmony, beauty of detail, line and colour, or of light and shade are always in our minds, and mean more or less in theory and practice according to the mental attitude or power of the individual. The quality "style" embraces them all, but it contains a further idea—namely, the possession of a controlling force which will unerringly guide the individual aright to whatever he puts his hand, and especially when he finds himself out of harmony or at variance with tradition; and, at a time when tradition is in the melting-pot, that quality becomes the touchstone by which all things are tried—I mean, of course, what, for want of a better term, we call "taste," implying an innate aptitude developed and fostered by education and experiment. Taste may be acquired to some degree by education and experiment without being inborn, and these means should be within the reach of all. They are, therefore, of great importance. To try experiment in design without education is for most men waste of time and probably worse. To know what has been done is a good step towards arriving at what may be accomplished, and what has taken centuries to evolve may be understood with diligence in comparatively few years. Knowledge is in itself power, but it is the business of the teacher, whose whole life is given to gaining and imparting knowledge, to encourage, as far as in him lies, the search for the beautiful, and the application of fresh energy and original thought to the old problems which recur and recur from generation to generation. In other words, to encourage experiment upon the basis of education, and so to train taste and develop style.

The antiquarian spirit seems to me a thing to be discouraged, and copying and plagiarism cannot be too sternly repressed from the beginning. A copyist tacitly acknowledges that the final say has been said, that he has surrendered his functions as a thinking being, and that the conditions of to-day are the same as those of yesterday; and it is not upon historical knowledge, but upon productive and progressive thought based upon that knowledge, that both individual and national architecture depends. Without that thought all work becomes unproductive and retrogressive.

Any system of education can deal with facts and point out what to study, but the inspiration of teaching comes from the man who can go a step further than that, and can show how to *think*—who can bring out great underlying principles, and, without imposing his own personality, induce the application of those principles to successful production.

I have no wish or intention to enter into the somewhat futile discussion as to whether it is possible to develop a new style in architecture. How far we are to develop upon purely individual lines, or how far upon those of schools of thought, will depend largely upon the particular development of our educational system. Individualism of the right kind—individual interpretation based upon thorough knowledge and confined within legitimate lines, and subject to the canons which always have, and always must, govern building—is the first thing we wish to encourage. "Il y a aura toujours une place pour l'homme à qui la nature a donné le secret de voir, de sentir, et de penser par lui-même." But is it not a legitimate object of ambition that the individual may once more work within a national style? We are Englishmen, proud of our race, and with a still strongly marked national character, and we have traditions of which we may also be proud. We want every architect to be an educated

man; we have our schools in London, Leeds, Glasgow, Liverpool, Manchester, and elsewhere, and the Board of Education are making admirable efforts to co-ordinate the instruction given in various centres as much as possible. Is there not ground for hope that the unintelligible wanderings and vagaries of the near past may be abandoned, and common ground be once more felt under our feet, with well-restrained rivalry between local schools and between individual workers which may secure action and reaction of mind on mind, and progress in thought and work? I for one should rejoice in such a consummation.

Now I believe that there is nothing to prevent any fairly able man from selecting any particular phase in the evolution of the architectural art, nor by a process of mental sympathy, careful study, and continued and enthusiastic practice from obtaining so complete a grasp, not only of the external details, but also of the fundamental principles of the style he has chosen, that he can design in it with accuracy and facility, and by dint of his own thoughts or personality so apply the principles as to bring them fairly into line with the requirements of his day. If he succeeds on any scale we are grateful, and pay a tribute to his genius and to the help that sincere thought and work have brought.

But have such efforts, as a rule, anything but an antiquarian or personal interest? How about the Greek revivalists exemplified by, say, Thompson? There is much to learn from their scholarly methods, and we should be the poorer without many of their buildings; but is their work anything but an interlude without effect upon national architecture? How about the Anglo-Venetian efforts due to Ruskin's influence and writings? Are not the results pure exotics, however scholarly they may be? What would the builder of the Casa d'Oro have to say to them if he could see them in our grimy streets? How about the same influence which sent architects of a certain time to fill their sketch-books with French Gothic, to be reproduced with little regard to scale or fitness? Would not energies which were directed to producing churches and public buildings, the inspiration of which was consciously drawn from an arbitrary period in the history of a foreign country, have been better employed in developing their art along its natural lines? We may remember that the author and creator of their inspiration was declaring that St. Peter's was only fit for a ballroom.

But attempts have been made to go back to the beginning—to throw away all the intervening experience, and start *de novo*. If you are to try experiments with antiquity this is, at any rate, a logical thing to do. One may cite as an example that fine and distinguished work recently completed in Westminster. Personally I cannot but regret that its talented author was called upon to work in an alien style; and it is a tribute to his genius that the result is so fine, and so great an addition to the buildings of our time. It is fascinating to see the forms of the earliest Christian architecture adapted and thought out until we have a magnificent modern church suited to London atmosphere and light, and to its ritual and congregational purposes; unmistakably Byzantine in essential principle of design, yet so treated that it seems to take fresh life, vigour, and beauty in every detail.

And yet when all this and much more has been said it remains an exotic apart from our own life, and traditions, and methods of thought, like a beautiful interlude of song introduced into a play with no reference to the context, or a panel of Praxiteles built into a mediæval cathedral. One cannot help feeling that in less able hands, and with more ordinary opportunities, such attempts must degenerate into the mere stirring of dry bones and arid exercises in design.

As to the direction of studies with a view to developing powers of designing, one can but leave that to those whose business it is to teach. An educational system can, however, only put a man in the right way. It will take him along the broad highway of inquiry, and will note this sign-post and that lining the road on either side. It cannot do more than point

out the byways and suggest excursions which the individual must follow up for himself; but it should insist on study for study's sake—not for the sake of picking, choosing, and pilfering, but for the encouragement of observation and the formation of a body of knowledge which shall serve as a starting-point for thought and experiment to which it will give an impetus upon the right lines. The ultimate result is in each one's hands.

Only one word by way of illustration of the study of principles. As we all know, beauty of building is very largely a matter of feeling for line. The apogee of line we are taught to find in the Parthenon, and the value of studying such a monument does not lie in examination knowledge and cram, in the mere archæological fact that the columns are 556 diameters high, that the curve of the stylobate is so and so; that the angle columns are set so much closer than the intermediate, and so on throughout the whole list. It lies, rather, in the training to eye and mind that complete recognition of the beauty of these refinements, and full realisation of their constructional object, will confer. With such recognition of beauty and realisation of its *raison d'être* an inspiration and an ideal are set up which must constantly guide the mind in whatever it is engaged upon, and which become an integral part of style.

To the student specialising in architecture it is the same as the study of the classical languages as a basis for general culture, whose value, in spite of recent controversies, I must believe will always exist. It is the same as the study of Roman law to the student of jurisprudence, or as that of ancient history to the student of modern history and sociology.

It is not necessary in any meeting of architects to insist upon the importance of planning, and in this branch of his work the architect is called upon to exercise considerable constructive thought. It is planning essentially that differentiates our buildings from those of other times and other needs, and from the growth of necessities in planning something is to be hoped for in the development of architecture.

Certain types of plan are still more or less traditional—that, for instance, of places of public worship—though even here one sees no reason why some modern type might not be evolved which might appeal to religious instincts as much as the old. A Vanbrugh or Talman palace still serves to-day, and many prefer to live in old houses of less architectural dignity for the sake of family tradition or artistic charm. But they would generally require something different if they set about planning a new house. The requirements as to light, air, and sunshine are more exacting to-day, because our life as a nation is spent more indoors, and because, Nature's advantages being scarcer than of old in towns, they are the more sought after for commercial, industrial, educational, or sanitary reasons.

I am inclined to think that modern requirements in planning are as much as anything responsible for the chaotic state into which building, not only in this country, has fallen. Either attempts to reconcile a modern plan with traditional design have too often ended in fiasco, because externals rather than principles were aimed at, or style ceased to be a desideratum, and the plan has been expressed by mere construction lacking imagination or æsthetic sense.

The study and dissection of really fine planning, of its treatment as an architectural entity, and of its growth from the ground upwards, will give a mastery over the principles to be aimed at in the development of bald walls and supports, and stimulate the imaginative faculty by which internal and external effects, vistas, and proportions present themselves as inseparable from the plan lines. We shall all agree about the fascination of a beautiful plan, and that a satisfactory plan usually gives a satisfactory superstructure, while an unskilful and thoughtless plan probably results in an unskilful and thoughtless building.

In the study of old work from the point of view of the builder as distinct from that of

the historian or archæologist there is, to my mind, an important quality which may be cultivated, not generally dealt with in treatises, and there is a classification to make which is not noted in the text-books. I refer to a feeling for the appropriate in architecture, and to the study of methods by which appropriateness has been obtained by past builders.

Buildings may be of two classes with infinite combinations between the two extreme types. On the one hand you may have that whose purpose demands monumental treatment, with all that it implies; on the other that whose purpose requires that beauty in design must be obtained in quite other ways than those which we usually associate with monumental work. Straightforward and honest building is common to the two, but the one may entirely stop at that; the other soars to whatever heights of imagination its author's ability and the means at his disposal will lead.

It is quite natural and proper that a student should base his education upon the highest type of work that he can find, and if he has done his duty to himself he will be familiar with the best work of every age, and will be prepared by his education to undertake work of the highest kind. If he is fortunate enough to get such work to carry out, his training will stand him in good stead. But many do not get such opportunities. Have these made a real study of the methods by which past builders have obtained their effects in the less ambitious efforts with which our own and other countries are filled, beautiful examples in their own way of simple, unaffected work of the country? With a knowledge of these methods and the application of individual thought and experiment the work might be picked up again and carried on, and much of the awfulness of modern buildings might be banished. I have reason occasionally to pass through a certain suburb built upon what was once as beautiful a hillside as you could find. It has been covered by one who, I am told, calls himself an architect with villas which I dare not attempt to describe, but they are such as create physical nausea, and such as one may unfortunately come across on the outskirts of too many English towns. There is no excuse for such crimes against nature and man, and there is no remedy but training. I believe that there is hardly any building that in spite of adverse conditions of all kinds may not, with little or no more expenditure of money, though there may be of thought, be made more dignified and more conducive to healthy living and thinking. We have seen buildings in desolate streets, without even the luxury of the stone window and door-heads that every grimy and monotonous house in the street possesses, made noticeable pieces of architecture, not only in contrast to their surroundings, but evidently and intrinsically beautiful by the simple arrangement of voids and solids in common brick, and the pitch of the roof and the projection of the eaves.

There has been much talk about simplicity of late, and one fears that some who talk most of it will be first to repudiate it when the pendulum of fashion swings in the other direction. It must be fascinating, as Mr. Dooley hints, to be a simple millionaire, and no doubt simple spoons of gold are pleasanter to a man of taste than ornate silver ones, and halls lined with the glow of simple marble than with the most rococo plaster.

But what I would insist upon is that we must divest our minds of all cant and shibboleths. We honour as one of the greatest virtues real restraint and true and appropriate simplicity, not affectation of it; and cottagy palaces or pretentious cottages are equally abhorrent to taste. Yet can we say that they are uncommon?

A cathedral or a great town church may be filled with the fullest beauty of detail and richness of material and colour proper to a centre of (we hope) pious wealth, and to a great congregation with the attendant facilities for fine ritual; but all these are out of place in a church embowered in trees and surrounded by clustering cottages and quiet meadows. How strange many of the great Norfolk churches appear, little cathedrals left among

the crumbling ruins of once prosperous towns; and how incongruous it would be to set about building them now! The architect must have this feeling for appropriateness; he must have sympathy with the objects for which, and the surroundings in which, he is working. He should therefore not only apply himself to the acquisition of knowledge which will form a background in his mind when designing greater works, he must also store his mind by observation which will enable him to deal with many and many a case in which good detail, as it is called (and which recent generations were, I think, inclined to identify too completely with good architecture), must be a matter of absolutely no account, and that the simplest means may, with thought, produce the most appropriate, or the only possible, effects —the most appropriate even when there may be means at his disposal to do more, the only possible effects when those means are lacking.

The principles upon which such effects depend may be studied in many old buildings, ecclesiastical, municipal, or domestic. Of the last class what more beautiful series could you have than your own Yorkshire cottages? or—and you will pardon my preference for the gentler and more winning modes of the Midlands—than the houses of the Cotswolds? The rather larger hall or manor-house exhibits the same straightforward planning and building as does the cottage; the same grouping of roofs and gables and chimneys, arising almost inevitably from the plan and explaining its arrangement at a glance; and no student could do better than to analyse the principles that dictated their designing and the methods by which so admirable an effect is obtained from so simple materials.

Composition and grouping are of essential importance where a building stands detached from others, and doubly so where beauty of materials and workmanship cannot be called in to assist. Its value as an architectural work will, indeed, depend solely upon these qualities.

It always seems to me that the possibilities of your own and similar country are of the greatest, since the levels of your hillsides and valleys present considerable difficulties to the architect, and difficulties thoughtfully solved are usually the making of a building. No two sites are exactly alike, and as the requirements of two clients or two buildings are seldom alike, there is every chance for individuality of treatment. If the mind is trained and the eye quick to notice how in this case or that—say in Yorkshire, or Gloucester, or Devon, or among the Jura or Pyrenean or Apennine villages, or in such towns as Laon, or Mont St. Michel, or Vezelay, buildings may group on hillsides, or with water or among trees—how lower buildings may be used to buttress higher, and the whole form harmonious lines and tones with the surroundings—then mind and eye will also be quick to catch the grouping and arrangement and tones which will least interfere with Nature's own dispositions and plan, grouping and design being worked together, nothing will be wasted; outbuildings, even for such menial purposes as cleaning of boots or storing of coal and wood, washing of clothes or potting of plants—not to mention farmsteads or stables—may all be used in their humble way instead of being scattered and outcast, or huddled round a stuffy hidden yard.

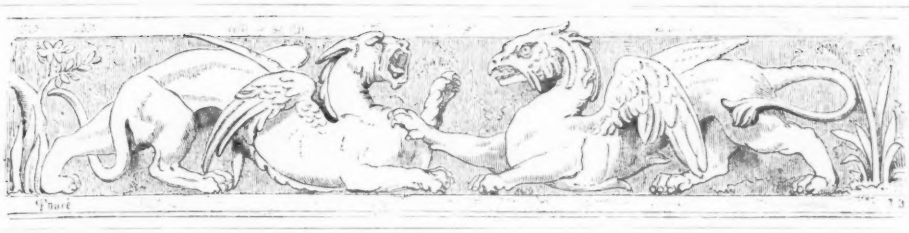
Take many of the almshouses scattered over England and note how charming many of them are in grouping, and yet how simple in plan and in design; made out of local materials, with perhaps one spot of decoration in a coat of arms exactly at the right point to focus the building. Here may be broad shadowy eaves and a simple gate and steps, and direct quiet path up to the broad low door. It may be that that door with the coat above it attracts generations of artists. Anyone might be proud to have designed it, and yet, probably, no more money has gone on it, except for that one point of decoration, than if the pitch of the roof had been bad, the shadow of the eaves less, the door seven feet by three, or the windows of a less beautiful proportion than they are. Why cannot we oftener study the design and proportions of a door or a window and arrive at our own idea of what it is that gives them

beauty? It must be there if we will only think about it; and, once discovered, one could never again perpetrate the old thoughtless trade monstrosities. So working upwards throughout the processes of building we should arrive at ideals which must be worth something because they are the product of cultivated taste and thought based upon the principles of beauty, which are best studied from good work of the past, and which apply to the humblest features; but if by hard thinking we can arrive at a fresh set of principles unknown before, giving a new and convincing ideal of beauty, so much the better for us and the world. Only is it not wise to know what has already been done, and not waste years in inventing and perfecting a patent which has been registered perhaps two thousand years ago?

I have rather laid stress upon design in architecture of an unassuming kind because the student is naturally busy with more ambitious things, and is apt to overlook the importance of preparation for the more unostentatious work which is by no means easy to do well, and is so important in every-day life, where there is no scope for mouldings and columns and pinnacles and crockets, but where individual treatment in composition and in the use of broad surfaces, light and shadow, and refined proportion of the whole and its parts, should reveal careful study and a trained taste. As the greater includes the less, so the pursuit of the highest side of the subject will include the same principles of design as will be needed in the sort of work we refer to; but I think that the faculty for composition and harmony with nature is rather apart from the ordinary routine of studentship. Before we turned tradition out of doors such work was done by travelling masons. Surely we should all of us be able, in spite of the restrictions of to-day, to rise so far. Indeed I am sure that any indictment on this score falls with less justice on our profession than it did ten or twenty years ago, and conditions point, I believe, most hopefully to the future.

Perhaps another ten or twenty years will find us with greater control over modern constructional methods. We have found new developments, notably in steel, but we have not yet turned our training and thoughts with success to its possibilities as an architectural medium. We have to hide it up and case it in with materials with which we think we know how to deal, and, indeed, until we can discover some material with the qualities of steel, but which may be trusted under all conditions, our conquests in this direction seem likely to be confined to the domain of science so far as our general building operations are concerned. The designs for the Grissell Medal of this year show some result from directing attention to the subject; but whatever progress may be made, and whatever beauty can be got out of a building constructed entirely in steel, one feels that we shall be still dependent upon the same old principles, and that knowledge and training will be just as essential to success in design as before.

I hope that I have not been labouring platitudes and truisms—one is apt to fall into them—and it is quite certain that there will be very little new in these stray remarks to those who have thought about these subjects at all. As I said at the beginning, I have been largely forestalled, and it was impossible to cut out everything and start the subject afresh.



DESIGNING FOR MOSAICS AND STAINED GLASS.

By J. Eadie Reid.

Read before the Northern Architectural Association, 31st January 1905.

I DO not propose, in dealing with the subject set for this evening, to enter into any long historical account of the two sections of decorative art, further than perhaps in passing to touch upon periods which may help me to make my meaning clear. I sometimes feel that it is a little misleading to speak of designing for one material and designing for another, as if there were various ways of designing—different means of arriving at the goal. Every artist, I am confident, will agree with me that there is only one way, and that through the narrow portals of invention. That, without doubt, is the first and great essential.

By using the word "invention" I mean that you must be able not only to see your subject as it presents itself to your mind's eye, but by some curious and subtle process you must have the power to arrange that the actors in your subject shall adapt themselves to the exigences of the space which is to be decorated. It may be round or square, regular or irregular, but there must be no feeling of a picture which has had pieces cut out of it to fill the space. The grouping of the composition must look unconscious, without the slightest hint of posing or extravagance of attitude. At the same time the whole machinery of design must be hidden away, so that while line and colour adapt themselves to the peculiar shape of the panel, yet ease, simplicity, and directness combined is the aim of the artist. That, in short, is design, whether the scheme is for figure or ornament.

There is another side to the "making" of designs—a tendency to allow the subject to come from the tip of the pencil rather than from the brain, with the result that "mannerism" is achieved. Certain attitudes, sitting or standing, tricks in reproducing drapery, repetition in the placing of hands and heads, unconsciously reproduce themselves, and occur over and over again with dangerous facility, unless we are ever on the watch. In fact, if you find your design comes easily at first, eye it suspiciously, and test it in every conceivable way until it proves itself sound and good. It is so easy to turn out graceful curves and twists, especially to-day when so much licence is given to an erratic growth.

Mannerism is often confounded with style—that is, the way that an artist does a thing, and which is a part of himself. No two men can put on to glass or paint on canvas the same object treated in exactly the same way. The very nature of our being renders this impossible. Consequently technique in art is as diverse as handwriting, even when we have purposely set ourselves to follow the work of some master, *i.e.* apart from mere copying. The great and golden rule which will help us to steer clear of mannerism—the dangers of unconscious trickery in drawing or painting—is to study, draw, and observe always.

Now by this I do not advise mere sketching, which, I believe, is often a useful way of forgetting. There are certain things in nature which can *not* be sketched; they must be

studied and stored up in the memory. A hasty sketch often blurs the clearness of your perception at the time, but if you draw it afterwards from memory you will be amazed to find how mere hard looking has helped you, and how well the details are remembered. It is not always possible to stop and draw everything which appeals to you—some detail of ornament, some delicate harmony of colour, or valuable grouping of figures. It is therefore necessary to cultivate drawing from memory, otherwise much that is invaluable to your practice will be lost. When you *can* stop and draw, do so; but I would advise you to *draw*, not to sketch. If there is a difficult bit, analyse it and keep at it until you have thoroughly mastered every detail. For instance, take a piece of stationary drapery, make a hasty sketch, and then try and use it in your cartoon or painting; you will find you have missed just the useful part. On the other hand draw it in such a way that you have exhausted all its resources, studied every groove, cast, shadow, and reflection, and when you turn again to your cartoon the work is more easy for you, and you are able to adopt and simplify almost without reference to your study. The Japanese artist will sit for a whole day looking and studying without touching pencil or paper. Of course I know that there is no law. The method of one designer—as we have already noted—is not the method of another, and after the rudiments of technique, the handling of pencil and colour, have been acquired, you must find out the rest for yourselves. There is no recipe for designing. You may know every line of "historic ornament," and yet be unable to evolve the simplest pattern.

It is just possible to draw too much and look too little, and in so doing we lean upon "convention," which is supposed to point to an easy way out of our difficulties, so much so that design and convention are popularly supposed to be twin sisters. We hear of a conventional rose, a conventional figure, which generally means that neither object recalls what it is intended to represent; as far as nature study is concerned, they are first cousins to the weird forms with which we adorned the margins of our school books. The lines are more pleasing and resolve themselves into agreeable forms such as we find in the latest fashion of ornamental design. Nevertheless convention has done loyal service, and by putting the best construction on the word we find that the ill-used term really stands in the relation to design that impressionism takes in painting. Where the latter deals with the mysteries of atmosphere, the former embodies the recollection of a given form which is influenced by the chisel or brush, by the more or less playful treatment of the material in which we work. It is wrong convention when we attempt to reproduce in a less congenial method. What can easily be rendered with one pat of the brush is infinite labour with the etching needle, and *vice versa*.

The laws of design, however, are as unchangeable as those of the Medes and Persians. It is not until we have fixed our ideas, invented our scheme, that we can begin to adapt it to our materials of glass, pigment, or carving. This may sound heretical, but in truth it is the only way to arrive at success. The knowledge of the medium which you begin to bring upon the design when once conceived is a thing by itself, and no unimportant factor. Half the ingenious designs which are drawn every year are lost to the world for want of actual knowledge of the methods they are presumably designed for. Your message may be an important one, but surely if you wish it to be told you must learn the language. There is a false confidence, a belief that the workman will put it right, which often ends in disaster. Again, in the desire for originality of eccentric form, the idea is overlooked in the effort to astonish. The antidote to this is to be found in the study of the early præ-Raphaelite masters. In Giotto, for example, the first thing that strikes you is the quiet dignity, the forceful, unstrained simplicity with which the story is told; no extraneous additions to divert the eye or mind from the principal action. Every movement of the assisting figures is a note in the phrase.

The secret lies in the sincerity of the designer, who kept himself in the background while he endeavoured to realise the scene as he imagined it took place. The day of art for art's

sake has not yet arrived, although the sense of beauty in nature makes itself evident, and stamps the work with the hall mark of individuality. Take, for instance, the preaching of St. Francis before Pope Honorius, a composition of figures seated in a semicircle, the Pope occupying the centre. You cannot mistake the intention—the preacher and the listener; yet at the same time there is no sacrifice of interest in the minor actors, no attempt by means of light and shade to force St. Francis into prominence, or to send the cardinals into a gloom of obscurity. Or, again, that most dramatic fresco in monochrome where the praying saint brings water from the rock, while the thirsty peasant guide bends over the stream. Vasari waxes eloquent in his admiration of the simple action which he avers was attempted for the first time in art. The side-play of the astonished monks emphasises the directness of the story-telling.

I have chosen these two because the figures of monks, cardinals, pope, and peasant were actual people of the artist's day, and presented no difficulties of costume or model. The same may be said of scriptural subjects. The mystery play was a common event, and the artist had but to represent the scene as it had presented itself to his gaze on the last great festival day. His audience criticised it not from the standpoint of archæology or topography, but from its likeness to what they were all familiar with. What may amuse us to-day in anachronism of costume and country never troubled the painter or his admirers; the story was the thing. If the subject was to be rendered in glass or mosaic it owed in a great measure its quaintness of form to difficulties of cutting and glazing or the laying of tesseræ; but still, above all, where the interest lay there the attention was directed. Glass was precious, and if the hot iron slipped in cutting, or the piece broke in the attempt to achieve some strange shape, in it went with another lead through head or hand, sometimes with happy result; but we feel that the artist was not thinking so much of his material as intent upon the simplest and most direct way of realising it. Again, if his brush in tracing the folds of the drapery adopted a certain mannerism, it had the saving merit of being peculiar to the technique of the glass painter. There is no doubt that much of the bad drawing in ancient glass arose, not because the original designer drew it so, but because the glazier often misinterpreted him, much as he does to-day if you leave him to himself.

Now as Giotto drew and painted as well as he knew how, and better than Cimabue, opening the way to the magnificent creations of Michelangelo and Raphael, so would I plead for the designer of to-day. We have seen that these men designed with all their knowledge and with their own characteristic style. They never designed tapestry or fresco in the manner of Albert Dürer, or painted minutely like Van Eyck, although they knew and appreciated their work. When they borrowed compositions wholesale, as we know they did from their predecessors, they made them their own. It has been left to the twentieth-century client to ask for such things from the designer, the result being that we pull down our grammars of ornament and hunt out our photographs, so that fifteenth, tenth, or twelfth century details of drapery and so on may be reproduced. Or if the demand is made in a lighter mood we must perforce dance to the tunes of the Louis' or walk in the stately ways of the Renaissance.

Now while it is just possible to masquerade successfully in these various styles, yet surely you are missing the best part of the artist himself. If you commission a painter of pictures you would not venture to ask him to paint his landscape like Corot or your portrait in the manner of Sargent. So with the designer; he may force his way through the thicket of ages, but in so doing he suffers materially, and only the rags of his individuality remain. Some years ago when painting the apse of a church in the West of England, a well-known architect came to place a commission in my hands. All the preliminaries from the business point of view were discussed and satisfactorily arranged, and then a large roll of drawings was

produced by my client. When they were opened before us I looked at them with no small consternation. "Of course," I said, "these are merely your suggestions for the subjects?" "No," he replied. "That is how I wish the figures to be drawn. I have studied church decorations, and have come to the conclusion that this is the only way in which they can be done." "But," I pointed out, "look at the faces, the hands, the draperies. I could not paint those things." And I didn't. Again, I have been asked to draw angels like Pugin! How can I? The very fact that years have been spent in drawing the figure and analysing drapery is sufficient reason why it is impossible to draw in that manner. I should never succeed, and if I attempted to do so the result would not be sincere.

The essential part of an artist's education is the study of the great masters' works, and by so doing he avoids dangers which would otherwise assail him. He sees demonstrated before him some of the great problems of his art both in composition and colour. The experience gained is laid by and made use of in his future work. He learns to avoid the staginess of the later men, and to appreciate the quiet dignity of the earlier. The drawing of Michelangelo will set a standard, and the colouring of Titian will inspire him. Rembrandt will initiate him into the mysteries of shadow, while Velasquez tells the secrets of craftsmanship.

Having insisted upon the first stages of design—the conception—we may now deal with the execution. You have decided upon your scheme and arrangement. It will now be necessary to make drawings from the life and from drapery before you begin to work upon the full-sized cartoon. The finish of the cartoon must depend upon the conditions under which the finished work is to be done. In stained glass, for instance, if you are to paint the glass itself, it will only be necessary to design the leads and general forms for your own guidance, as you will naturally work the hands and heads from the original studies. On the other hand, if the cartoon is to be translated by the glass painter then you must show everything and finish carefully. As in the mosaic cartoons, nothing must be left to chance.

In designing lead lines I frankly accept them as the boundaries of my forms and as a means of gaining variety of colour. Cross leads breaking through the forms are necessary to give strength to the window and also to enable the cutter to do his work easily. It is not impossible with the diamond to cut strange and weird shapes, but it is not advisable. Your sin will find you out, and the broken glass will always be a record against you. The object of the bars is of course to divide the weight and simplify the fixing. If you put the whole window in one piece it would sooner or later begin to settle downwards and bulge outwards. It is best to recognise your leads from the outset. If you make a delicate monochrome or chalk drawing it takes some courage to plough into it with thick black lines; but really what may look brutal in your drawing does not appear so in the finished window. The light eats away on either side, so that in many cases it is lost, and by using different thicknesses you can play with advantage.

In the mosaic windows—as they are styled—full strong colouring can be used, and it is amazing how little painting is required to express your intention. The "flash" of course must be painted, but in due relation to the height—bold and vigorous at a height, and more delicate as it comes near the eye. The glass at Cresford—near Wrexham—of the fourteenth century has many small figures, but the details are vigorously painted and nothing is lost. Fairford is painted more delicately, but still shows with clearness every form adapted to its position in aisle and clerestory. The different terms "painted glass" and "stained glass" can be explained by the fact that "stained glass" means pot metal—that is, the colour is in the glass itself—while "painted glass" may be white glass painted upon by means of differently coloured enamels and stains. The most commonly used are the silver stains, which run from a pale yellow to a deep orange colour. In a window of this class the leads do not follow the colours

so closely, and the pieces of glass are much larger ; consequently the work is dependent entirely upon the painter.

But colour, to my mind, is the goal—light and shade are out of place. The art of the illuminated missal is the original model for the window maker, as it was that of the fresco painter, with the additional glory of light which no pigment can ever give. To the colourist no branch of his art can give such pleasure. It is a revelling in combinations and harmonies beyond the reach of the painter. Compare the coloured design submitted to you with the completed work! There is a danger in the sketch to suggest more than the window is capable of—a pictorial realistic feeling which captivates the donor and often ends in disappointment. The highly finished dainty drawing usually submitted with leads omitted, or at the most suggested, and bars ignored, bears little relation to the actual finished work. There is one thing which ought to be remembered in looking at sketches for large decorations : the man who is accustomed to making cartoons on a large scale cannot with ease tune himself to the dainty miniatures which are expected of him by his clients. Another thing to be remembered : what may look all right on a small scale is often all wrong on a large, and immediately you begin to enlarge your suggestion you find how exacting it becomes. If your vision is clear, and you are sure of your ground, my advice is, Design it full size. Of course I know there are many difficulties in this, apart from the art side.

Mosaic presents other difficulties which are purely technical. In preparing the first sketch I see no reason for making little squares all over the drawing ; they are of no value, and if you were to reduce the completed mosaic you would scarcely see them. The best way to design the large cartoon is to keep your forms large and think more or less in tesseræ. To do this you must work yourself with glass, chisel, and cement to realise how difficult the process is, and also how much in the dark you are as to the result. You must work in faith with a clear impression of the end. Aim at something more than you can do. Mosaic as a rule is usually at some height, and the colouring must be achieved accordingly. The tesseræ available are not very brilliant in themselves, and to use differently coloured gold cubes would become tinselly and gaudy. The best effects are obtained by simple means. Supposing you wish a purple. If you have one already made for you, and put it into position, the result is disappointment ; but if you take red, blue and white, and put them side by side, you will find the colour you want fused and mixed in the eye. So on with other shades ; place what are called the primary colours side by side—green, blue and yellow, orange, red and yellow, brown, black and red, and many other modifications which will suggest themselves as you work. The art is a decorative one, and although there is no limit to the pictorial side, that is not the end. The wonderful copies of Raphael and others to be seen over the altars in St. Peter's, Rome, are the last word in mosaic. As specimens of imitative work they have set a standard in the minds of the travelling public, so much so that if you mention mosaic you are universally asked if you have seen those in St. Peter's. They never mention Ravenna in the same breath, or think of St. Mark's as being the same material! Still, as works which will remain after the original canvases have disappeared, they are valuable ; but, as I have already stated, imitation is not the end of mosaic, but points to a decadence as real as that of the Greek period. "Pliny's doves" in the Capitol are equally wonderful, but they are a *tour de force* and not a precedent. The Pompeian mosaics were intended for the rich man's floor ; but when Christianity pressed the art into its service the walls were considered the more dignified position for figure subjects—imperishable representations. Art was at its lowest, as the crudeness of the drawing bears witness ; but, nevertheless, there is dignity and reserve in the treatment—a due recognition of the material.

The lesson we learn from a study of the mosaics in Venice or Ravenna is principally this : we ought not to compose groups of animated figures, the composition must be architectural, all

movement must be slow and monumental, there must be no hurry. The procession at Ravenna moves solemnly from west to east. The Majesty in the dome of St. Mark's raises His hand with great dignity. Angels hover with upraised wings. Apostles stand in rapt attention to hear the words which He utters. So in the Crucifixion. The sacred tragedy moves through the events with slow dignity, nothing unseemly, no violent gesture. We feel this more strongly when we turn from the east to the west, and look at the fresco-like designs of Titian and his followers—crowded groups full of movement encroaching upon the art of painting in which the subtle gesture, the flutter of drapery, the movement of limb and foliage, can be rendered.

Now I fear that, after all, I have not shown or told you much how to design; but if I have succeeded in encouraging any of you who have found difficulty in expressing yourselves, it will be sufficient. I would only repeat, to be able to design you must be able to draw, and the only way to perfect your drawing is to keep on drawing. At the same time you must acquire, not merely superficial knowledge of the material you are designing, but you must endeavour to gain a practical knowledge; but neither practical knowledge nor drawing will make you a designer if you have not already got design in you. I have seen men produce beautiful studies from the life, and yet they have submitted the most awful compositions when they were thrown upon themselves. If I have insisted upon studying the works of past masters in art it is because I reverence their work—and no one has studied them more earnestly—and I trust that as my experiences increase I shall be better able to realise their full meaning and significance; but I hope that I have made it clear that the study of the old masters is not everything.

If an artist has the sense of design and the ability to execute, there is no reason why he should endeavour to emulate, no matter how skilfully, the works of past ages. The mission of the artist is to see, not only the things around him, but to render with all the knowledge and skill which have been given to him the imaginings of his brain; in short, all that is embodied in the word "design." If these things are hot within him, if he feels them so strongly that outside influences do not affect him, he must perforce put them down upon paper or canvas imbued with his own individuality and in his own peculiar style. There will be no halting to think how Giotto would have done it, or how Titian would have coloured. He will see with his own eyes, paint as he feels until he has realised the mental images, colour, and treatment in sympathy. This does not merely apply to painting alone, but is the essence of all art, be it glass or mosaic. When once the knowledge of the material has been acquired it is simply a recognition of the limits and courage to cut down details. The artist will be governed by the lead or the tessera, and there will be no emulation of the miniature painter. In stained glass the wealth and richness of colour will appeal to him, the value and quality of light will suggest and tempt him on to new combinations and harmonies, until we are again in a position to rival the great masters who have left us such perfect models of windows. It is not lack of fine glass or want of workmanship—you can get both. It is rather the danger of imitating certain periods of glass design, and, I might add, not the best periods: a timidity in designing a window which does not look like another stained-glass window; and a fear of colour, while glass and yellow stain with a touch of ruby and a point of blue seems to be as much as the modern will allow himself. It is not so in domestic glass; why should it be so in church? Have we forgotten the glass in the Duomo of Florence, the windows in St. Francis of Assisi, not to mention scores of others, both at home and abroad? The subject opens out many roads to discussion and variance of opinions. I can only speak as a humble worker, Design and Colour being my motto.

9, Conduit Street, London, W., *26th Aug.* 1905.

CHRONICLE.

The late Alfred Waterhouse, R.A., *Past President.*

It is with sincere regret that we have to record that the illness from which Mr. Alfred Waterhouse had so long suffered took a fatal turn last week, and he passed away at his residence at Yattendon, Berks, on Tuesday, the 22nd inst., aged seventy-five years. The event will have caused feelings of the deepest sorrow and regret, not only among his friends and colleagues, but among all who have had the privilege of association with him in the varied concerns of his distinguished career. Few architects, it may truly be said, had won so fully and deservedly the esteem, the confidence, and the admiration, alike of the public as of the profession. The Institute, whose affairs he guided with such marked distinction during his term as President, loses in him a staunch supporter, a firm and constant friend, ever concerned for its advancement, its honourable status, and its practical efficiency. Mr. Waterhouse's professional career and architectural work will be fully dealt with in the Memoir to appear in a later issue of this Journal. For the moment the main facts of his long and intimate connection with the Institute need only be briefly recalled. He was elected a Fellow in 1861, was awarded the Royal Gold Medal for Architecture in 1878, served a few years as Vice President, and occupied the Presidential Chair during the three years 1888–1891. He presided over the deliberations of the Institute which resulted in the adoption of the present system of Progressive Examination; and subsequently, after the resignation of the late Mr. Arthur Cates, held for some years the position of Chairman of the Board of Examiners. His contributions to the Transactions, besides his very able Presidential Addresses, include Papers on the Manchester Assize Courts (1864–65) and on the Town Hall at Manchester (1876–77). His portrait, a striking work by Mr. W. Q. Orchardson, R.A., is one of the finest and most precious in the Institute collection. A photographic portrait taken during his presidency appears as a frontispiece to the volume of Transactions 1890–91.

Visit to Newcastle and Annual Dinner.

Arrangements are in progress for the Institute visit to Newcastle-on-Tyne, where the Annual Dinner is to be held on Friday, the 13th October, under the auspices of the Northern Architectural Association. The following is a brief preliminary programme:—

Thursday, 12th October:—9 till 11 P.M.: Northern Architectural Association President's "At Home."

Friday, 13th October:—9.30 A.M.: Excursion on the Tyne in the steamer *J. C. Stevenson*, kindly placed at the disposal of members by the Tyne Improvement Commissioners. 1.30 P.M.: Invitation Luncheon. Visits to places of interest in the city. 8 P.M.: R.I.B.A. Annual Dinner at the Assembly Rooms, Westgate Road.

Saturday, 14th October:—Excursions to Hexham or Durham, under the guidance of local members. A special visit has been arranged to Durham Cathedral.

Members of the Institute desiring to be of the visiting party, or to be present at the Annual Dinner, are urged to communicate with the Secretary at as early a date as possible.

The Intermediate Examination and A. A. Students.

The Council of the Institute, on the recommendation of the Board of Examiners, have resolved that the drawings prepared in the Architectural Association Day School may be submitted to the Board of Examiners for admission to the Intermediate Examination in lieu of the Testimonies of Study as required by the conditions laid down in the Institute programme, and if the work is found satisfactory the candidate may be admitted to the Examination.

The Council is shortly to confer with the Architectural Association as to the possibility of exempting from the Intermediate Examination students who have completed the four years' course in the Architectural Association School.

The Hague "Palace of Peace" International Competition.

The programme of the competition for the architectural plan of the Peace Palace and Library for the use of the Permanent Court of Arbitration at the Hague is to hand from the Board of Directors of the Carnegie Foundation. The building is to cost 1,600,000 guilders (roughly £133,000). The document, presumably a foreigner's rendering in English of a French original, is as follows:—

Article 1.—The competition is open to architects of all nations. The Board of Directors of the Carnegie Foundation, however, intends to invite specially some of them to compete.

Article 2.—Competitors have to take care that within seven months after the date of issue of the present programme, as expressed thereon, the following will be in the possession of the Board of Directors of the Carnegie Foundation at The Hague:

a. A plan, showing the situation of the building with its surroundings; scale 1 : 500.

b. The ground-plans of the different floors: scale 1 : 200.

c. The drawings of the four façades; scale 1 : 100.

d. Two vertical sections showing: the main staircase, both the large and the small court of justice and the library (that part of the building where the books are stored); scale 1 : 100.

e. The middle portion (travée) of the front façade with section; scale 1 : 50.

f. A portion (travée) of the interior of the large court of justice; scale 1 : 50.

g. A drawing of the main staircase; scale 1 : 50.

h. A drawing, giving a perspective view of the building and its surroundings.

The view is to be taken from the point marked 0 in the plan of the site which is joined to this programme.* This view shall be drawn on a sheet of paper, long 0·80 M. high 0·60 m. These drawings must clearly show the distribution of the building in all its details.

The destination of the rooms must be clearly written in the ground-plans in the French language; reference to an indicating list is not allowed.

The drawing of the front façade and the perspective view must be executed in colours; all the other drawings in black lines.

No plastering is allowed on the façades.

Article 3.—Together with the plans a short explanatory notice, quite legibly written in the French language, must be sent in, and, in order to render possible correspondence with the author of the plan without knowing his name, a closed and sealed letter mentioning his name, and bearing on the outside an address and an epigraph, which epigraph shall also figure on the drawings, on the explanatory notice and the package.

Article 4. The packages, containing the above-named plans and papers, that have not arrived at The Hague within seven months after the issue of this programme, will not be opened; and remain at the disposal of the sender.

Article 5.—If the author of any plan should fail to comply with one or more of the provisions of this present programme, his plan shall be excluded from the competition.

Article 6.—The letters, containing the names of competitors to whom a prize has been awarded, will be opened by the jury.

Article 7. The jury is composed as follows:—

The Chairman of the Board of Directors of the Carnegie Foundation.
Mr. Th. E. Collcutt, London.
Dr. P. J. H. Cuypers, Roermond.
Geh. Ober-Hof-Baurat Ihne, Berlin.
Professor K. Königs, Vienna.
M. Nénot, Member of the Institut de France, Paris.
Professor W. R. Ware, Milton, Massachusetts.

Article 8.—By accepting their commission the members of the jury declare to agree fully with all provisions of this present programme and to renounce entirely to compete.

Article 9.—The jury give the preference to those projects that answer best to the requirements of this programme and excel from the point of view of art and construction.

The following prizes will be awarded:—

A prize of 12,000 guilders.
A prize of 9,000 guilders.
A prize of 7,000 guilders.
A prize of 5,000 guilders.
Two prizes of 3,000 guilders.

Article 10.—After the publication of the decision of the Jury, all the plans sent in shall be publicly exhibited at the Hague during a month. The official report of the Jury shall also be published and deposited for inspection at the Exhibition.

Article 11.—Competitors may apply for information to Mr. D. E. C. Knuttel, architect at The Hague, No. 16 Fluweelen Burgwal.

Article 12.—The projects to which a prize is awarded become the property of the Carnegie Foundation.

If the execution of a project to which a prize is awarded be entrusted to the author thereof, the amount of the prize will be deducted from his honorary.

Article 13.—The building will be erected as much as possible at the place indicated by cross-hatching on the plan of the site annexed to this programme.

Article 14. The Peace Palace shall contain the following parts:

A. COURT HOUSE.

Basement Story.

1. Dwelling of the concierge, containing four rooms and kitchen, &c., directly accessible from the Park, and communicating with the different stories by a servants' staircase (*escalier de service*).
2. Two spare rooms, sufficiently light, and communicating with each other.
3. A place for the caloriferes with fuel-store.
4. A room for the stenographers.

Further, as far as the available space and the construction will allow, wardrobes, lavatories, &c., servants' rooms, waiting-rooms, and store-rooms.

Principal Story.

The floor of the principal story must not be more than 2·50 M. above the exterior ground.

1. Great hall with main staircase.
2. Staircase leading to the basement story.
3. Doorkeeper's room.
4. Large Court of Justice, 280 to 300 M².
   With or without an anteroom, with a removable podium, and a gallery either along a side wall or at the end.
5. Small Court of Justice, 140 to 150 M².
6. Adjoining each Court of Justice a council room, each 40 to 45 M².
   With waiting-room, wardrobe, lavatory, &c.
   (If the council rooms are close together, one waiting-room, lavatory and wardrobe for both will be sufficient.)
7. Two rooms for the parties in the case, each 40 to 45 M².
8. A chancery room, 40 to 45 M².
   With a vaulted safe (2 × 2 M.) and booklift to the upper story.
   Messengers' rooms, wardrobes, lavatories, &c.
   The council rooms shall have each a separate or together one joint exit to the Park, either directly or through the basement story.

Upper Story.

1. A room for the Conseil Administratif of the Permanent Court of Arbitration ± 90 M².
   (A council room for 30 to 35 persons around a table.)
   With an ante-room.
   And a president's room, 20 to 25 M².
2. A room for the general secretary, 40 to 45 M².
   With a waiting-room and lavatory, &c., 15 to 20 M².
3. Two secretaries' rooms, each, 25 to 40 M².
   With one joint waiting-room and lavatory, &c.
4. Two rooms for clerks, each 20 to 35 M².
5. One room, or two communicating rooms, for archives, together ± 80 M².
6. Four study rooms, each 20 to 25 M².
   Messengers' rooms, wardrobes, lavatories, &c.

* The plan and photographic views of the site are to be seen at the Institute.

B. LIBRARY.

(The Library must be built so as to form a separate part of the Peace Palace, with its own main entrance from the Park, and an interior communication with the Court House on the principal story.)

Basement Story.

1. Dwelling of the concierge, containing four rooms and kitchen, &c., directly accessible from the Park, and communicating with the different stories by a servants' staircase (*escalier de service*).
2. Store-rooms and packing rooms.
3. Bookbinders' workshop.
4. Place for the caloriferes with fuel-store.
5. Spare rooms.

Principal Story.

The floor of the principal story must not be more than 2·50 M. above the exterior ground.

1. Doorkeeper's room.
2. The library, where the books are stored, ± 500 M². Fireproof (10,000 M. bookshelves in five stories), lighted by windows from at least two opposite sides.
3. Two reading rooms, each ± 60 M².
4. Adjoining an office room for the distribution of the books, 40 to 45 M².
5. Two rooms for the librarian and sub-librarian, each 40 to 45 M².
6. A waiting room, ± 20 M².
7. Two rooms for clerks, each ± 25 M².
8. A room for geographical maps, ± 60 M².
9. A cataloguing room, ± 60 M². Messengers' rooms, wardrobes, lavatories, &c.

Upper Story.

1. A room for the Board of Directors of the Carnegie Foundation, ± 40 M². With a waiting room, ± 30 M².
2. A chancery room, ± 40 M².
3. Spare rooms. Messengers' rooms, wardrobes, lavatories, &c.

The Board of Directors of the Carnegie Foundation,

The Hague, VAN KARNEBEEK, *Chairman.*
15th August 1905. S. VAN CITTERS, *Secretary.*

Fire-Resisting Construction.

The Fire Offices' Committee have issued a revised set of Rules for Standard Fire-Resisting Buildings, not including cotton mills, flax mills, woollen mills, and worsted mills. Rules as to Reinforced Concrete Construction have been included. Buildings to be deemed of Standard Fire-Resisting Construction must conform to the following description :—

Height and Cubical Contents.

1. Height not to exceed 80 feet, measured from the lowest point of the land level or ground line of the site on which the Building stands to the level of the highest part of the roof.

2. Cubical contents of any one compartment not to exceed 60,000 cubic feet.

N.B.—In computing the cubical contents of a compartment, the floor area, excluding doorway and window recesses, and the actual height from floor to ceiling are to be measured. Due deduction may be made for a sloping roof.

Walls and Partitions.

3. Brick, terra cotta, and/or cement concrete composed of broken brick, burnt ballast, furnace slag, clinker, or other similar hard and burnt material.

4. No external area or party wall to be less than 13 inches thick in any part, or if of concrete 20 inches.

N.B.—Stone used externally only as ashlaring or facing, with a backing of brickwork not less than 13 inches thick, and for dressings, sills, string courses and cornices, allowed.

5. All internal partitions to be of incombustible material, excepting only office enclosures of hard non-resinous wood with or without glazing.

6. If there is any Building adjoining, the dividing or party wall to extend at least 3 feet above the roof of the Fire-Resisting Building.

Flues.

7. All flues to be built of brickwork, no part of which towards the interior of the Building is to be less than 9 inches thick, and all furnace flues to be lined with fire-brick throughout for a distance of at least 20 feet from the furnace. No timber or woodwork to rest in or be plugged into the brickwork of any flue.

Openings in Walls.

8. The total superficial area of openings in each external or area wall of any story above the ground story not to exceed one-half of the area of the wall (measured as to height from floor to ceiling of the story in which the openings occur). All loop-hole or teagle doors and frames and window frames and sashes to be of iron or other hard metal. All windows above the ground story to be glazed with glass not less than ¼-inch thick, in sections not larger than 2 superficial feet, or wired glass, or electro-copper glazing in accordance with the Rules of the Fire Offices' Committee in force when such glazing is provided.

9. Every window or other opening above the ground story opposing (whether directly or diagonally) and within 20 feet of any window, skylight, or glazed or other opening in any other Building (whether such latter window, skylight or opening be protected or not), or overlooking (whether directly or diagonally) and within 20 feet of the roof of any Building to be protected by "fire-proof" shutters or "fire-proof" doors.

Floors.

10. Brick arches, terra cotta, fire-clay, or concrete as above described, the floor being in no part less than 6 inches in thickness, and carried on metal joists, girders and columns, or brick walls or piers.

N.B.—Floors of wood not less than 9 inches thick ceiled with plaster on metal lathing and with the floor boards laid on the bearers without intervening space allowed.

11. Wooden flooring laid on concrete allowed provided there is no space between the wood and the concrete. Wooden fillets not exceeding 2 inches deep permitted if bedded flush in the concrete.

12. Scuppers to carry off water the opening of each of which shall not be less in area than 21 superficial inches to be provided in the external walls to each floor above the ground story at intervals of not more than 12 feet.

N.B.—In buildings within the City of London or within the area controlled by the London County Council, scuppers are not essential.

Roofs.

13. Roofs to be entirely of the incombustible materials as described for floors in Rule 10 except that 4 inches be substituted for 6 inches in thickness.

Note.—*Glass not less than ¼ inch thick in sections not exceeding 36 superficial inches, set in iron or other hard metal, and wired glass or electro-copper glazing in*

accordance with the Rules of the Fire Offices' Committee in force when such glazing is provided, shall for the purpose of this Rule be deemed incombustible.

Outlets on to roofs rendered necessary to satisfy the requirements of the Factories and Workshops Acts permitted, provided that all doors and frames be of iron or cased in iron plate at least $\frac{1}{8}$ of an inch thick, and that they be self-closing.

PROTECTION OF STRUCTURAL METAL WORK.

14. All columns or stanchions to be covered with brickwork or porous terra cotta (at least 2 inches thick), or with cement, concrete, or plaster at least $1\frac{1}{2}$ inches thick, keyed into metal supports and protected by a metal guard up to a height of not less than 4 feet from the floor where cement, concrete or plaster only used.

15. Girders, joists, lintels, and all structural metal work (other than columns and stanchions but including framework of roofs), where not covered with brickwork, to be completely encased in porous terra cotta at least 2 inches thick, securely anchored, or cement, concrete or plaster at least 1 inch thick keyed into metal supports.

16. Space must be left at the ends of girders and joists to permit of expansion.

LININGS AND CEILINGS.

17. No lining of wood or textile fabric, to any part of the walls, partitions, ceilings, or roof.

FLOOR OPENINGS.

18. No openings through any floors allowed except as follows:

(*a*) Holes to admit driving shafts, pipes, and iron or earthenware tubes for electric conductors. Shafts to fit closely in metal collars, and all pipes and tubes to be cemented round the full thickness of the floor.

(*b*) Staircases and hoists of which the enclosures are constructed entirely of brick or cement concrete as above described at least 9 inches thick, with a regulation fire-proof door to every opening.

N.B.[1]—*Stairs and landings within said enclosures to be constructed of incombustible material.*

N.B.[2]—*Where the building is within the City of London or in the area controlled by the London County Council, hardwood doors to openings may be allowed instead of fire-proof Doors.*

N.B.[3]—*Where the staircases and hoists extend to the top floors they must have a glass roof protected externally with strong wire-work, and the enclosing walls must be carried through and* 18 *inches above the roof of the building.*

In factories and workshops in the area controlled by the London County Council a glass roof protected as above is only to be provided in cases where the enclosing walls and staircases are carried through and 18 *inches above the roof of the Building, and also above the roof of the adjoining premises. Otherwise the roof must comply with the requirements of the London County Council.*

(*c*) Belting and rope races enclosed as for staircases and hoists.

SHAFTING THROUGH WALLS.

19. Shafting where passing through walls to fit closely into wall, or have wall boxes closed with iron plates not less than $\frac{1}{4}$ inch thick, leaving no open space.

PIPES AND ELECTRIC CONDUCTORS.

20. All pipes in the Building, except water pipes not exceeding $1\frac{1}{2}$ inches in diameter, to be of hard metal. No wooden casing to be used for enclosing electric conductors.

COMMUNICATING COMPARTMENTS.

21. Two or more compartments, each constructed in accordance with these Rules, may communicate whether by double fire-proof doors or otherwise, provided that their aggregate cubical contents do not exceed 60,000 cubic feet.

22. Two or more such compartments, whose aggregate cubical contents exceed 60,000 cubic feet, can only be allowed to communicate across a fire-proof compartment, built up from the basement with walls of solid brickwork, and constructed in all other respects in accordance with these Rules so far as the same are applicable, and having all openings protected by fire-proof doors at least 6 feet apart.

23. Except as above no communication allowed between a compartment constructed in accordance with these Rules and any other building or compartment.

The following are the Rules now added as to Reinforced Concrete Construction:—

Buildings constructed with concrete reinforced in every part with embedded metal rods or bars spaced not less than 12 inches apart, securely connected or overlapping at least 6 inches at all abutments and intersections, having also bands or bars across the thickness of the concrete, may be deemed of Standard Fire-Resisting Construction, provided they conform to the above Rules with the following modifications:—

Rule 3. Concrete may be composed of sand and gravel that will pass through a $\frac{3}{4}$-inch mesh, or of the other materials mentioned in the Rule, but in any case the cement used must be Portland (equal to the British Standard Specification of December 1904), in the proportion of 6 cwt. of cement to each cubic yard of concrete. The concrete must be thoroughly mixed both dry and wet, and must be rammed round the metal work in position, every part of which must be completely enclosed with solid concrete.

Rule 4. No external wall to be less than 6 inches, and no party wall less than 13 inches thick in any part.

Rule 7. Flues may be built of reinforced concrete as described not less than 4 inches thick, if lined throughout with fire clay tubes not less than $1\frac{1}{2}$ inches thick. No timber or woodwork to be in contact with such flue.

Rules 10 and 11. Floors must be constructed of reinforced concrete as described not less than 5 inches thick in any part without woodwork bedded therein, supported on beams and columns of similar reinforced concrete.

Rule 13. Roofs must be constructed in a similar manner to floors, the concrete in no part to be less than 3 inches thick.

Rules 14, 15, and 16. All structural metal work must be embedded in solid concrete, so that no part of any rod or bar shall be nearer the face of the concrete than double its diameter; such thickness of concrete must be in no case less than 1 inch, but need not be more than 2 inches.

Rule 22. Fire-proof Compartments in connection with reinforced concrete structures must also be of reinforced concrete as described, with walls not less than 9 inches, and floors not less than 5 inches in thickness.

Rule 18. Enclosure to staircase and hoist, if of reinforced concrete as described, may be 6 inches in thickness.

Buildings conforming to the foregoing specification are charged reduced rates of premium for fire insurance as compared with buildings of ordinary construction.